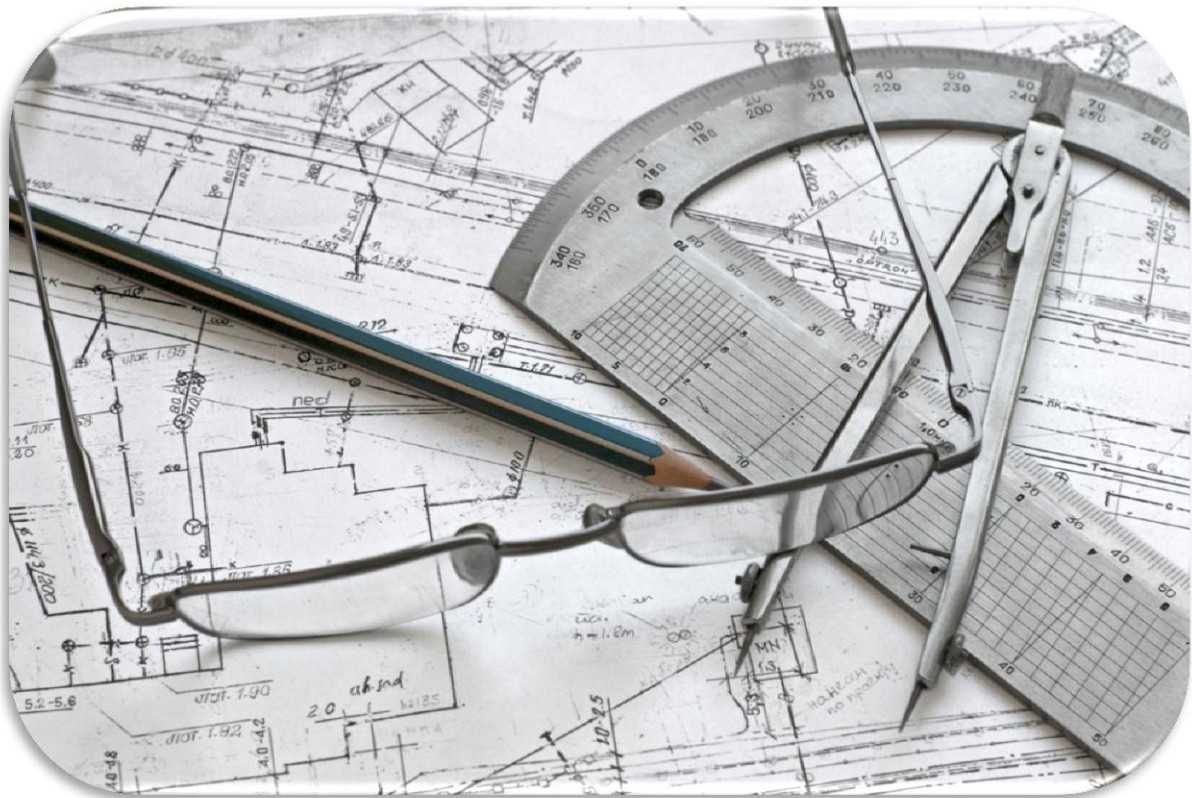


## Engineering and Construction



**With engineering and construction... we design and develop energy and environmental infrastructures**

Abengoa (MCE: ABG.B/P SM /NASDAQ: ABGB) applies innovative technology solutions for sustainability in the energy and environment sectors, generating electricity from renewable resources, converting biomass into biofuels and producing drinking water from sea water.

## Sectors

### Energy



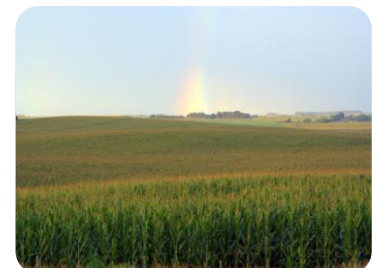
The growing global demand for energy means it is important to come up with new solutions, prioritizing those that use clean and renewable sources. Abengoa therefore develops plants that convert energy from renewable sources into electricity and biofuels, as well as constructing the transmission lines that make up our electricity networks.



### Environment



The growth of the population, improved living conditions in developing countries and climate change are going to lead to significant changes in demand for natural resources. Aware of this trend, Abengoa produces drinking water from sea water and waste water.



## **Abengoa carries out its engineering, infrastructure concessions and industrial production activities in both sectors:**

### **1 Engineering and construction**

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Engineering and construction includes our traditional engineering business in the energy and water sectors, with more than 70 years of experience in the market. We specialize in carrying out complex turnkey projects such as solar-thermal plants, solar-gas hybrid plants, conventional generation plants, biofuels plants and water infrastructures, including large-scale desalination plants and transmission lines, among others.

### **2 Concession-type infrastructures**

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We have an extensive and young portfolio of proprietary concession assets that generate revenues that are governed by long term sales agreements with formats such as take-or-pay contracts or power purchase agreements. This activity includes the operation of electricity generation plants (solar, cogeneration or wind) and desalination plants, as well as transmission lines. These assets generate no demand risk and we focus on operating them as efficiently as possible.

### **3 Industrial production**

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This activity covers our businesses with a high technology component, such as biofuels and the development of solar technology. The company holds an important leadership position in these activities in the geographical markets in which it operates.

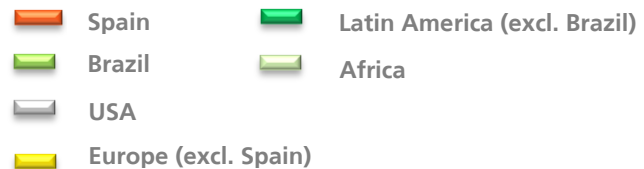
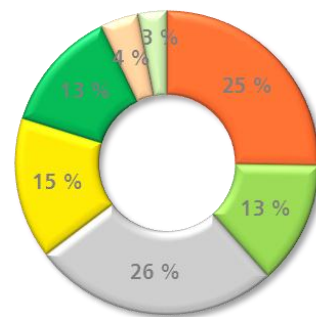
## Internationalization

The internationalization of Abengoa is strengthening our commitment to offering innovative solutions for sustainable development with a local perspective, integrated in a global outlook.



Note: Data for 2013

Ventas 2012



Abengoa is committed to internationalization as a key element of its strategic plan. With a presence on five continents, our strategy is based on the following points:

- Become an international leader for promoting, constructing and operating innovative solutions for sustainable development.
- Provide customized solutions for all the sectors in which we operate.
- Guarantee efficient and responsible distribution and sales of our technologies and products around the world.
- Achieve leadership in technologies such as second-generation biofuels or solar-thermal plants in order to supply a sustainable energy alternative to the planet.

## Engineering and construction

Engineering and construction includes our traditional engineering business in the energy and water sectors, with more than 70 years of experience in the market. We specialize in carrying out complex turnkey projects such as solar plants, solar-gas hybrid plants, conventional generation plants, biofuels plants and water infrastructures, including large-scale desalination plants and transmission lines, among others.

### 1 Biofuels

In the biofuels sector, we carry out turn-key projects for bioethanol and biodiesel production plants using different types of biomass and have accumulated extensive experience over the last few years with more than 2.5 billion liters of installed capacity.

In 2010 we completed construction of three bioethanol plants – two in the USA and one in Rotterdam, the largest in Europe to date. In 2011 we began construction on a second-generation bioethanol plant in Hugoton, Kansas (USA), which is the first commercial plant of its kind. In 2012 Abengoa was selected to construct a 70 ML bioethanol plant in Uruguay for the state owned company Alcoholes del Uruguay (ALUR).

In 2013 we completed construction of the first demonstration plant using Waste-to-Biofuels (W2B) technology.



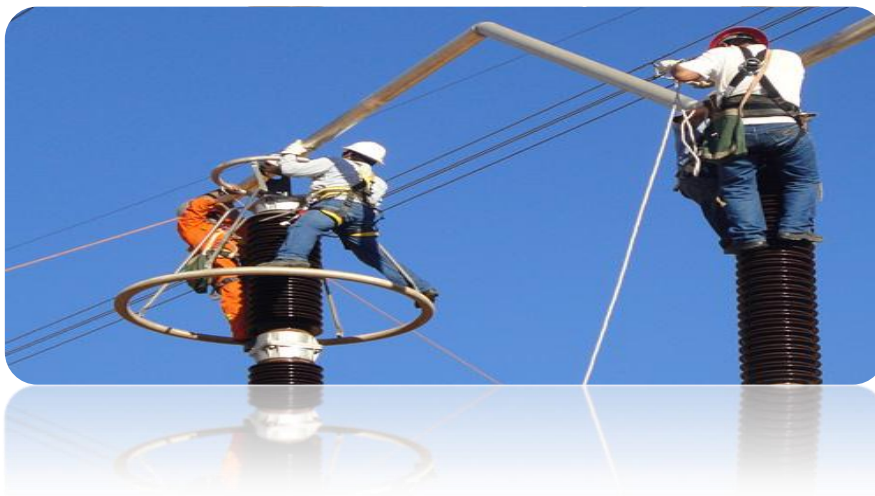
## 2 Electricity transmission

Abengoa is the largest international construction company for transmission and distribution; the second largest international constructor of electrical infrastructures; and is ranked fourth in Latin America, according to ENR magazine (Engineering News Record) in 2012.

In the last five years we have constructed more than 5,000 km of lines in countries such as Brazil, Peru, Chile, Argentina, France, Spain, Romania, Morocco and India, as well as international interconnection systems, such as the project carried out in Central America. We are currently constructing a continuous current transmission line in Brazil covering approximately 2,350 km, the largest of its type ever constructed in Latin America.

In 2012 Abengoa constructed 1,476 km of electricity transmission lines. Furthermore, during the same year the company was awarded numerous projects in Latin America, including six new transmission lines covering more than 5,200 km in Brazil, two 500 kV electricity substations in Uruguay and two construction projects totaling 120 km in Argentina, among others. Moreover, in 2013 the company won new contracts in Peru for the engineering, construction, maintenance and operation of a total of 354 km, while in Mexico it has been awarded an EPC contract for a total of 201 km.

In 2012 Abengoa also entered the Australian market winning a contract for a 132 kV line.



## 3 Cogeneration

Cogeneration simultaneously produces electricity and high temperature heat, which can be used in industrial processes. It is an energy efficient solution that Abengoa promotes.

Abengoa currently has cogeneration plants in Spain and Mexico with an installed capacity of 400 MW. The company is also present in the wind power market, constructing and operating various wind farms in Latin America. In 2012 Abengoa began construction of the El Zapotillo aqueduct in Mexico, the Peralta wind farm in Uruguay and three wind farms in Brazil.

In Poland the company has been selected to carry out the engineering and construct the country's largest combined cycle plant with a capacity of 450 MW. In the USA, Abengoa will construct a cogeneration plant in Texas that will generate 15 MW of electricity; it will construct and subsequently maintain an electricity power plant for a period of 30 years based on the gasification of municipal waste in Glendale, Arizona; and it will carry out the engineering, design and construction of a 440 MW combined cycle plant in Oregon.



Abengoa has also begun work constructing the high-speed railway line that will connect the cities of Medina, Yida and Mecca in Saudi Arabia in a project awarded to the Al Shoula Group, a Hispanic-Saudi consortium that includes Abengoa. The contract includes the construction and assembly of the 450 km railway line designed for trains travelling up to 350 km/h, the installation of the signaling and telecommunications systems, the electrification, the operations center and the integral maintenance of the system for a period of 12 years.

## 4 Solar electricity

The sun is a source of clean and unlimited energy. In existing solar technologies, Abengoa is a pioneer and a global leader in solar-thermal energy, as well as supplying photovoltaic solutions.

## ➤ Solar-thermal energy

Solar-thermal plants use the sun's energy to heat water or gas, which then passes through a turbine that converts the thermal energy into electricity. Solar thermal technology is easy to manage; the energy can be efficiently stored; and it can be easily integrated with conventional steam or combined cycle power plants at little additional cost.

Abengoa is a world leader in constructing these types of plants. The company currently has a total of 843 MW in operation and 810 MW under construction and is one of the few companies in the world that is constructing and operating solar-thermal plants using both tower and parabolic-trough technology.



We were the first to commission a solar-thermal power plant using tower technology on a commercial scale (the PS10 plant on the Solúcar platform in Andalusia) and we were the first to construct a combined cycle plant integrated with solar power (Integrated Solar Combined Cycle, ISCC), located in Ain-Beni Mathar, Morocco.

At the end of 2010 we started construction on Solana, the world's largest solar plant using parabolic trough technology, in Arizona, USA, with 280 MW of gross power which will come into operation in the summer of 2013.



In 2012 the company completed the financing and began construction on two plants: the 50 MW Khi Solar One plant, using superheated steam and tower technology with two hours of thermal storage, one of the largest plants in the world using this kind of technology; and the 100 MW KaXu Solar One solar plant using parabolic trough collectors, which will have three hours of storage. Both plants are located in South Africa.

Abengoa will also be involved in South America's first solar-thermal plant after it was selected in 2012 to construct a 10 MW thermal plant in Chile.

### ➤ **Photovoltaic energy**

Electricity can be produced from sunlight by harnessing the photoelectric effect using semi-conductors.

We design and construct photovoltaic power plants, adapting them to suit our clients' needs. We install photovoltaic panels on the ground and on roofs and we use both fixed and dual-axis tracking panels.

We can also optimize designs according to the characteristics of the site using high, low or non-concentrating panels, as well as thin-film technology.

In 2012 Abengoa was selected to carry out the engineering, construction and commissioning of one of the largest photovoltaic plants in the world, in the USA, which will have a 200 MW capacity and will cost \$360 million. It is expected to come into operation during the second half of 2014.



## **5 Water engineering**

Water is an essential resource that is scarce in some areas in terms of quantity or quality. We can obtain water that is suitable for human consumption through processes such as desalination, purification and drinking water treatments.

The experience we have gained over more than 70 years has made us a world leader in water-related engineering projects.

Abengoa designs and constructs water infrastructures and facilities, especially desalination and water treatment plants, and water distribution and transport infrastructures – irrigation, supply, control systems, etc.

We are specialists in designing, constructing and implementing turn-key projects for desalination plants using reverse osmosis technology – the most efficient and fastest growing desalination process today.

The specialist publication *Global Water Intelligence* ranks Abengoa as one of the leading companies in the world for desalinating sea and salt water.

During 2012, Abengoa won important contracts related to this sector, such as the construction of a desalinated water pipeline in Chile worth \$65 million; construction and operation for 25 years of a desalination plant in Tenes, Algeria, with a capacity of 200,000 m<sup>3</sup> of water/day; and the design, engineering, construction and subsequent support to operate and maintain a desalination plant based on reverse osmosis technology in Barka, Oman. This latest project, with a total cost of \$55 million, will supply water to more than 225,000 inhabitants.

### **6** Other activities

We are a leading engineering company for conventional thermal plant, electricity generation plants and all types of electrical and mechanical installations and control systems in the fields of energy, transport and industry.

Abengoa has more than 70 years of experience in engineering-related work, which gives us a commanding and competitive position in Latin America and Spain.

We install catenary systems for railways and metros, traffic control and toll systems, industrial processes, building control and lighting systems, communications antennae, thermal and acoustic insulation, etc.

## Engineering and Construction. 2012 figures

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- ✓ Presence in more than 40 countries.
- ✓ Order book of €6,679 million
- ✓ Solid engineering capabilities enabling us to exploit growth opportunities:
  - More than 18,000 people
  - Design engineering network with centers in the USA, India, Poland, Chile and Spain.
  
- ✓ Recognized as the number one international contractor for transmission and distribution (T&D), the second leading international construction company for electrical infrastructures (Power) and, new in 2012, ranked as the eighth largest contractor in the USA.



## Success stories 2012

### Transmission



Location: Brazil

- 2,375km 560 kV DC
- Amount: 1,024 M\$

Longest transmission line project in Latin America. Continuous current.

### Cogeneration



Location: Mexico

- 300 MW cogeneration plant
- Amount: \$460 M

1st cogeneration plant at a Pemex refinery

### Generation



Location: United Arab Emirates

- 100 MW solar-thermal plant using parabolic trough technology
- Amount: €500 M

The largest solar plant in the Middle

### Desalination



Location: China

- 200.000 m<sup>3</sup>/day
- Amount: \$150 M

2009 Desalination Deal of the Year (Water Intelligence)